DEQX Pty Limited
ABN 39 078 435 060
Tel: +61 (0)2 9905 6277
Email: support@deqx.com

Technical support advisory 051019a

Dealing with speaker measurement reflections

The purpose of the document is to supply supplemental information to the 'Installers Manual' on the subject of speaker measurement, and how to obtain the best possible results in different listening environments.

Requirements:-

- Version 2.0 Calibration software
- DEQX Calibrated™ Installers manual

Procedure:-

The difference between *speaker* and *room* correction is that *speaker correction* involves measuring the speaker utilizing a *pseudo-anechoic* technique to discover its native time and frequency domain performance by minimizing or entirely removing any room reflections returning to confuse the measurement from room surfaces.
This measurement technique requires the speaker is moved so that the distance from it to the nearest floor, walls and ceiling is maximized to a few meters (or more if possible).

If the room to be used for the speaker measurement is rather small, it may be advantageous to move the speaker to another location and measure it. Possible locations include:-

- Outdoors
- Large warehouse
- Large hall

The idea is to maximize the time between the initial signals emitted from the speaker and the reflections caused by the environment the speaker is being tested in.

If measuring speakers in an open space outdoors, we only have one reflection to worry about; the one from the ground, meaning the truncation window can be set quite long. Ideally, you would raise the speaker off the ground some distance to take measurements accurate at low frequencies with no reflections at all. In most cases this is rather difficult.

One idea to try is to put sound absorbing padding such as a foam mattress or bed covers on the ground between the speaker and microphone stand. This will not 'stop' the reflection, but it will reduce its impact on the higher frequencies. This technique can be used indoors as well as outdoors.

In some instances it is not possible or desirable to relocate the speakers to the centre of the room let alone another location, so once again use sound absorbing material padding such as a foam mattress or bed covers placed between the speaker and microphone stand to at least reduce one reflection.

Having done the best you can with the measurement environment, the rest is up to careful use of the calibration wizard and room correction wizard. For more information on using the calibration wizard, please see the technical support advisory 'Calibration hints'.